

中文題目：運用 AMISTAD 系統改善 ST 上升急性心肌梗塞病人治療時效

英文題目：A Study on Improving the Treatment Time Effectiveness of ST-elevation Acute Myocardial Infarction Patients with AMISTAD System

作 者：曾宣靈，廖家德

服務單位：財團法人奇美醫學中心 心臟血管內科

Background and purpose

ST segment elevation myocardial infarction (STEMI) causes a high risk of morbidity and mortality; the prognoses is highly associated with the reperfusion time of obstructed coronary artery. AMISTAD (Acute Myocardial Infarction Software Technology-Aids Decision) which can work on a smartphone and connect the multidisciplinary medical staff is a digital system to activate the procedure of primary percutaneous coronary intervention (PCI). This study aimed to investigate the impact of AMISATD on STEMI patients regarding the door-to-balloon time, i.e. reperfusion time, length of hospitalization, and risk of recurrent myocardial infarction.

Materials and Methods

The study retrospectively collected the STEMI patients before and after AMISTAD from a medical center in south Taiwan from 1, July 2017 to 31, December 2018. Group 1 (1, July 2018 to 31, December 2018) was the patients receiving AMISTAD, while group 2 (1, July 2017 to 31, December 2017) and group 3 (1, January 2018 to 30, June 2018) were those without AMISTAD. The baseline characteristics of patients, all time points before door-to-balloon, length of hospitalization, and recurrent myocardial infarction events within one year were collected from the electronic helth records. The outcomes were to comparre the each time interval before door-to-balloon, the length of hospitalization, and the risk of one-year recurrent myocardial infarction.

Results

There were 40 STEMI patients in the group 1, while the group 2 and 3 individually had 43 patients. The baseline characteristics between the groups did not differ significantly. After multivariates adjustment, the group 1 had significantly shorter time intervals of STEMI on electrocardiogram confirmation (5.5 ± 3.9 , 9.9 ± 6.7 , 8.7 ± 7.8 minutes, $p < 0.05$), catheterization strating time (11.4 ± 8.2 , 17.5 ± 4.5 , 15.9 ± 3.8

minutes, $p < 0.05$) and door-to-balloon time (57.7 ± 20.6 , 72.1 ± 15.1 , 74.4 ± 31 minutes, $p < 0.05$), comparing to the group 2 and 3. Length of hospitalization of the group 1 was significantly shorter than that of group 2 and 3 (4.1 ± 2.3 , 6.5 ± 5.6 , 6.2 ± 5.9 days, $p < 0.05$). However, the risk of recurrent myocardial infarction within one year was not significant different between the three groups.

Conclusions

Our findings demonstrated that the STEMI patients who received the AMISTAD system to activate the primary PCI are associated with a shorter coronary reperfusion time and length of hospitalization. Further studies with larger sample size and longer follow-up are warranted to determine the causal relationship.

Key words: ST segment elevation myocardial Infarction, AMISTAD system, reperfusion time